



GRASSED WATERWAY AT STRODA BROTHERS FARM

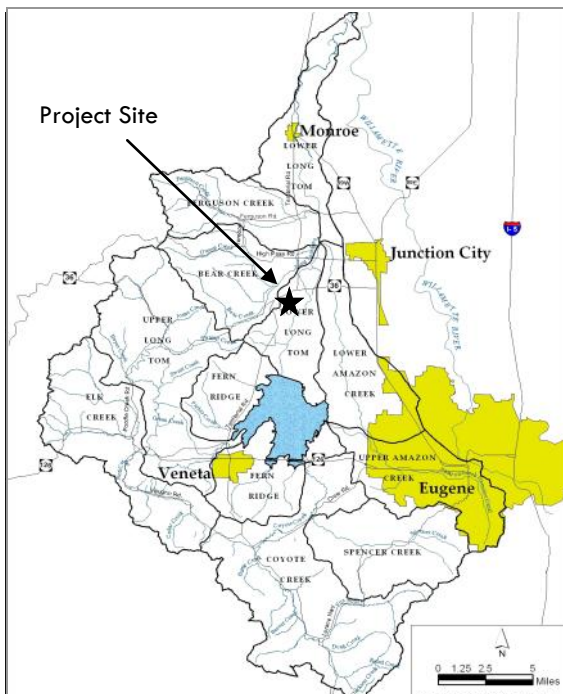
PROJECT BACKGROUND

Stroda Brothers Farm grows Christmas trees west of Cheshire. The site is sloped with approximately a 10% grade, making it susceptible to erosion and runoff. A 1,200-foot seasonal drainage located on one of the tree lots experienced heavy erosion and gulying. Previous management practices included filling in, re-grading, and seeding the drainage at the beginning of each eight-year tree rotation, but this was not able to effectively slow runoff. During the eight-year tree rotation, the seasonal drainage eroded three to five feet deep, resulting in many cubic yards of soil loss and downstream water quality pollution. Erosion causes sedimentation in the streams and increased turbidity, often bringing excess nutrients and pesticides with the runoff.



Pre-project: Photo shows bottom of drainage looking uphill. Note the lack of vegetation and deep gulying in the drainage channel.

For this project, landowner, with assistance from the Watershed Council, installed a grassed waterway that runs the length of the drainage. The bottom of the channel was widened, and a perforated flexible drain pipe surrounded with drain rock was installed sub-grade. These steep, eroding drainages are a common issue on Christmas tree farms. However, grassed waterways have been successfully installed on several tree farms in the Willamette Valley. In agricultural areas, grassed waterways act as vegetated filter strips that reduce erosion and filter nutrients before they drain into streams.



Post-project: Note the much gentler slopes in the drainage area and full vegetative cover. Grass establishment has been excellent.

RESTORATION TECHNIQUES

- ◆ The existing channel bed was re-graded and widened using a carry-all and scraper (see photo) to an even 10-foot average surface, allowing water to flow uniformly.
- ◆ The channel banks were graded to blend in with the adjacent slope.
- ◆ Once earthwork was complete, the Strodas seeded the bare soil with grass and covered it with erosion control fabric. The grass grows up through the fabric, forming a strong, erosion-resistant sod-fabric matrix.
- ◆ Long-term maintenance consists of annual mowing.

PROJECT BENEFITS

- ◆ Re-grading the channel structure to a wider, gentler slope will allow the water to spread out over the drainage area and grasses to take root and grow.
- ◆ Water velocities in the drainage were greatly reduced, which has eliminated soil loss and reduced downstream sedimentation.
- ◆ Nutrients such as nitrogen and phosphorous are filtered by the grassed waterway, which will help improve downstream water quality.



Implementation: The landowner uses a scraper and carry-all to construct the grassed waterway.



Pre-project: Bottom of drainage. Erosion was 3 – 4' deep here. Landowner put wood (i.e. Christmas trees) and small rocks in drainage in an attempt to decrease erosion with limited success.



Post-project: view from bottom of drainage looking uphill. This shows the last constructed portion of the grassed waterway, that was completed in June 2010. The bottom of the drainage has a small rock pad that dissipates energy from the sub-surface drain pipe that day lights here.

PROJECT FUNDING & PARTNERS

Project Cost: \$ 16,961
Funding:
 OWEB Grant: \$ 9,961
 Cash / In-kind Match: \$ 7,000

Partners
 Oregon Watershed Enhancement Board
 Kirk Stroda, Landowner

The Long Tom Watershed Council thanks our partners and funders!